

wherein R¹, R², R³, R⁴, R⁵ and R⁶ each independently represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms.

2. (Amended) The non-aqueous electrolyte secondary battery according to Claim 1, wherein said negative electrode comprises a carbon-based material capable of absorbing and releasing lithium.

4. (Amended) The non-aqueous electrolyte secondary battery according to Claim 1, wherein said non-aqueous solvent is a mixed solvent comprising a cyclic carbonate selected from the group consisting of alkylene carbonates having an alkylene group moiety of from 2 to 4 carbon atoms and a chain carbonate selected from the group consisting of dialkyl carbonates having an alkyl group moiety of from 1 to 4 carbon atoms, wherein the vinylene carbonate compound of formula (I) is present in an amount of not less than 20 vol-%, and wherein said cyclic and chain carbonates are present in an amount of not less than 70 vol-% based on the total solvent amount.

5. (Amended) The non-aqueous electrolyte secondary battery according to Claim 1, wherein said non-aqueous solvent except the vinylene carbonate compound of the formula (I) comprises one or more solvents having a relative dielectric constant of not less than 25 and a flash point of not lower than 70°C.

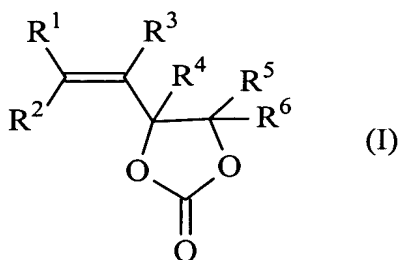
6. (Amended) The non-aqueous electrolyte secondary battery according to Claim 1, wherein said non-aqueous solvent except the vinylene carbonate compound of the formula (I) has a relative dielectric constant of not less than 25.

7. (Amended) The non-aqueous electrolyte secondary battery according to Claim 5, wherein said solvent having a relative dielectric constant of not less than 25 is selected from the group consisting of ethylene carbonate, propylene carbonate, butylene carbonate, γ -butyrolactone and γ -valerolactone.

8. (Amended) The non-aqueous electrolyte secondary battery according to Claim 5, wherein said solvent having a relative dielectric constant of not less than 25 is a mixture of ethylene carbonate and γ -butyrolactone.

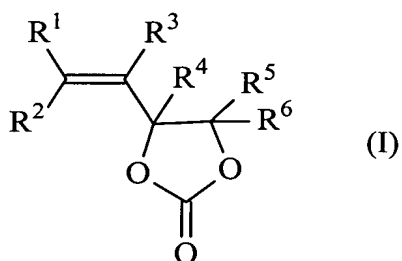
9. (Amended) The non-aqueous electrolyte secondary battery according to Claim 1, wherein the lithium salt is at least one salt selected from the group consisting of LiClO_4 , LiPF_6 , LiBF_4 , LiCF_3SO_3 , $\text{LiN}(\text{CF}_3\text{SO}_2)_2$, $\text{LiN}(\text{CF}_3\text{CF}_2\text{SO}_2)_2$, $\text{LiN}(\text{CF}_3\text{SO}_2)(\text{C}_4\text{F}_9\text{SO}_2)$ and $\text{LiC}(\text{CF}_3\text{SO}_2)_3$.

10. (Amended) A non-aqueous electrolyte for a non-aqueous electrolyte secondary battery comprising at least a negative electrode and a positive electrode capable of absorbing/releasing lithium, said non-aqueous electrolyte comprising a solute and a non-aqueous solvent, wherein said non-aqueous solvent comprises a vinylene carbonate compound represented by formula (I) in an amount of from 0.01 to 20% by weight:



wherein R¹, R², R³, R⁴, R⁵ and R⁶ each independently represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms.

11. (Amended) A non-aqueous electrolyte for a non-aqueous electrolyte secondary battery comprising at least a negative electrode and a positive electrode capable of absorbing/releasing lithium, said non-aqueous electrolyte comprising a solute and a non-aqueous solvent, wherein said non-aqueous solvent comprises one or more solvents wherein said one or more solvents have a relative dielectric constant of not less than 25, is present in an amount of not less than 90% by weight, exhibits a flash point of not lower than 70°C and comprises at least one vinylene carbonate represented by formula (I):



wherein R¹, R², R³, R⁴, R⁵ and R⁶ each independently represent a hydrogen atom or an alkyl group having 1 to 4 carbon atoms.

Please add the following new claims.

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12. (New) The non-aqueous electrolyte secondary battery according to Claim 6, wherein said solvent having a relative dielectric constant of not less than 25 is selected from the group consisting of ethylene carbonate, propylene carbonate, butylene carbonate, γ -butyrolactone and γ -valerolactone.

13. (New) The non-aqueous electrolyte secondary battery according to Claim 6, wherein said solvent having a relative dielectric constant of not less than 25 is a mixture of ethylene carbonate and γ -butyrolactone.